

11-504

11-504

Patitioner's Docket No. 1012-189(2003-012R1)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kolosov et al.
Serial No.: 10/804,446
Filed: 03/19/2004
For: MECHANICAL RESONATOR

Group Art Unit: 2856
Examiner: Unknown

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

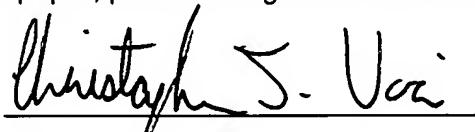
Applicants submit this statement in accordance with their duty of disclosure under 37 CFR 1.56 and 1.97-1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

A listing of the references on forms PTO/SB/08A and PTO/SB/08B are submitted herewith. Copies of the U.S. references have not been provided because its filing date falls after June 30, 2003. Applicants respectfully solicit the Examiner's consideration of the cited references and entry thereof into the record of this application.

If additional fees are due with the filing of this paper, please charge the amount to deposit account 50-0496.

Date:

11/04/04



Christopher J. Voci
Registration No. 45,184
Dobrusin & Thennisch PC
29 W. Lawrence Street, Suite 210
Pontiac, MI 48342
248-292-2920
Customer No. 25215

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. section 1.8(a))

I hereby certify that, on the date shown below, this correspondence is being:

MAILING

☒ deposited with the United States Postal Service in an envelope with sufficient postage as "Express Mail Post Office to Addressee" Mail Label No. EV492466185US addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

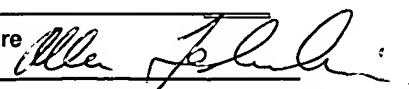
Date:

11/04/04

FACSIMILE

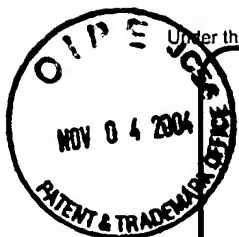
☐ transmitted by facsimile to the Patent and Trademark Office.

Signature


(type or print name of person certifying)

Please type a plus sign (+) inside this box → +

PTO/SB/08A (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		3,622,968		Silverman	11/23/1971	
		3,718,032		Gray	02/27/1973	
		3,778,757		Houston	12/11/1973	
		4,342,936		Marcus et al.	08/03/1982	
		4,349,881		November et al.	09/14/1982	
		4,370,662		Hou et al.	01/1983	
		4,391,338		Patashnick et al.	07/05/1983	
		4,526,480		Ward	07/1985	
		4,543,829		Lerch	10/1985	
		4,721,874		Emmert	01/26/1988	
		4,734,609		Jasime	03/29/1988	
		4,741,200		Hammerle	05/03/1988	
		4,779,451		Ezawa et al.	10/1988	
		4,812,698		Chida et al.	03/1989	
		4,910,523		Huguenin et al.	03/1990	
		5,179,028		Valie et al.	01/12/1993	
		5,191,791		Gerardi et al.	03/1993	
		5,201,215		Granstaff et al.	04/1993	
		5,224,174		Schneider et al.	06/1993	
		5,253,530		Letcher, III	10/1993	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
			EP 0102490		Bopp & Reuther GMBH	03/14/1984		
			EP 0282251		Schlumberger Electronics	09/14/1988		
			EP 0676638		Tektronix, Inc.	10/11/1995		
			WO 99/51980		Symyx	10/14/1999		
			WO 00/67086		Symyx	11/09/2000		
			WO 99/18431		Symyx	04/15/1999		
			GB 2187286		Hatschek	09/03/1987		
			WO 01/77624		The Charles Stark	10/18/2001		
			WO 91/02975		Ratner et al.	3/7/1991		

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

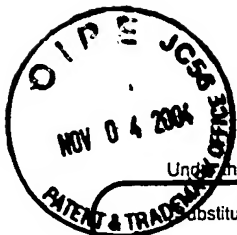
Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

1012-189

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	10/804,446
Filing Date	3/19/2004
First Named Inventor	Kolosov
Art Unit	
Examiner Name	
Attorney Docket Number	1012.189

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2002/0162385	11/7/2002	Ismail et al.	
		US- 3,710,275	1/9/1973	Tanaka et al.	
		US- 4,549,427	10/29/1985	Kolesar, Jr.	
		US- 4,802,370	2/7/1989	EerNisse et al.	
		US- 5,334,900	8/2/1994	Kawashima	
		US- 5,445,008	8/29/1995	Wachter et al.	
		US- 6,286,363	9/11/2001	Discenzo	
		US- 6,644,095	11/11/2003	Van Mullekom et al.	
		US- 6,023,961	2/15/2000	Discenzo et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	10/804.446
--------------------	------------

Filing Date	3/19/04
-------------	---------

First Named Inventor	Kolosov
----------------------	---------

Group Art Unit

Examiner Name

Attorney Docket Number 1012-189

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date	
Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

+

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	1	of	1
-------	---	----	---

Complete if Known

Application Number	10/804,446
--------------------	------------

Filing Date	3/19/04
-------------	---------

First Named Inventor	Kolosov
----------------------	---------

Group Art Unit

Examiner Name

Attorney Docket Number 1012-189

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		5,357,964		Spivey et al.	10/1994	
		5,375,470		Matsushima et al.	12/1994	
		5,454,045		Perkins et al.	09/1995	
		5,455,475		Josse et al.	10/1995	
		5,469,369		Rose-Pehrsson et al.	11/1995	
		5,488,866		Ravel et al.	2/1996	
		5,524,636		Sarvazyan et al.	06/1996	
		5,653,939		Hollis et al.	08/1997	
		5,734,098		Kraus et al.	03/1998	
		5,776,359		Schultz et al.	07/1998	
		5,852,229		Josse et al.	12/1998	
		5,889,351		Okumura et al.	03/1999	
		5,985,356		Schultz et al.	11/1999	
		6,044,694		Anderson et al.	04/2000	
		6,182,499 B1		McFarland et al.	02/2001	
		4,729,237		Suzuki et al.	03/08/1988	
		3,902,365		Knauth	09/02/1975	
		4,312,228		Wohltjen	01/26/1982	
		4,596,697		Ballato	06/24/1086	
		4,760,351		Newell et al.	07/26/1988	

[illegible]

Examiner
Signature

Date	
Considered	

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

+

Please type a plus sign (+) inside this box → +

PTO/SB/08A (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		4,767,719		Finlan	08/30/1988	
		4,922,745		Rudkin et al.	05/08/1990	
		5,283,037		Baer et al.	02/01/1994	
		5,296,374		Culshaw et al.	03/22/1994	
		5,306,644		Myerholtz et al.	04/26/1994	
		5,533,402		Sarvazyan et al.	07/09/1996	
		5,571,401		Lewis et al.	11/05/1996	
		5,698,089		Lewis et al.	12/16/1997	
		5,705,399		Larue	01/06/1998	
		5,741,961		Martin et al.	04/21/1998	
		5,744,902		Vig	04/28/1998	
		5,770,038		Iwama et al.	06/23/1998	
		5,798,452		Martin et al.	08/25/1998	
		5,827,952		Mansure et al.	10/27/1998	
		5,959,297		Weinberg et al.	09/28/1999	
		6,034,775		McFarland et al.	03/07/2000	
		6,151,123		Nielsen	11/21/2000	
		6,157,449		Hajduk	12/05/2000	
		6,175,409		Nielsen et al.	01/16/2001	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				


Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.



+

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

Sheet	1	of	1
-------	---	----	---

[illegible][illegible]Date
Considered

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

+



PTO/SB/08A (10-98)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Collection of information unless it contains a valid OMB control number.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	

(use as many sheets as necessary)

Sheet	1	of	1	Attorney Docket Number	1012-189
-------	---	----	---	------------------------	----------

[illegible][illegible]

Examiner Signature		Date Considered
-----------------------	--	--------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

0175 JC56
NOV 04 2004
PATENT & TRADEMARK OFFICE

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet | 1

of 1

Complete if Known

Filing Date	3/19/04
--------------------	---------

First Named Inventor	Kolosov
----------------------	---------

Group Art Unit

Examiner Name _____

Attorney Docket Number	1012-189
------------------------	----------

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		5,918,354		Ikegami et al.	7/6/1999	
		2002/0178805		DiFoggio et al.	12/5/2002	
		5,361,632		Magnani	11/8/1994	
		3,903,732		Rork et al.	9/9/1975	
		4,602,505		Kanda et al.	7/29/1986	
		2003/0213292		Budeiri et al.	11/20/2003	
		6,412,131		Zhao et al.	7/2/2002	
		4,802,384		Schwarz et al.	2/7/1989	
		4,904,978		Barth et al.	2/27/1990	
		5,204,529		Diatschenko	4/20/1993	
		6,269,686		Hahn et al.	8/7/2001	
		5,670,709		Gallagher	9/27/1997	
		2002/0194906		Goodwin et al.	12/26/2002	
		4,783,987		Hager et al.	11/15/1988	
		5,531,091		Gademann et al.	7/2/1996	
		6,176,323		Weirich et al.	1/23/2001	
		5,741,962		Birchak et al.	4/21/1998	
		5,006,845		Calcar et al.	4/9/1991	
		5,622,223		Vasquez	4/22/1997	
		2003/0179002		Beylich et al.	9/25/2003	

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1

of 1

Attorney Docket Number

1012-189

Complete if Known

Application Number	10/804.446
--------------------	------------

Filing Date	3/19/04
--------------------	---------

First Named Inventor	Kolosov
----------------------	---------

Group Art Unit

Examiner Name

Attorney Docket Number

1012-189

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
		5,235,844		Bonne et al.	8/17/1993	
		5,421,190		Brandle et al.	6/6/1995	
		4,890,480		Young	1/2/1990	
		2002/0064649		Lembke et al.	5/30/2002	
		6,536,634		Berndorfer et al.	3/25/2003	
		2003/0062910		Wang et al.	4/3/2003	
		2003/0083825		Berndorfer	5/1/2003	
		2003/0222656		Phillips et al.	12/4/2003	
		2002/0113596		Horie et al.	8/22/2002	
		2003/0145647		Ismail et al.	8/7/2003	
		2002/0148529		Berndorfer et al.	10/17/2002	
		6,564,126		Lin et al.	5/13/2003	
		6,640,644		Mireles et al.	11/4/2003	
		6,509,749		Buelna et al.	1/21/2003	
		5,533,402		Sarvazyan et al.	7/9/1996	
		2003/0041653		Matsiev et al.	3/6/2003	
		6,407,479		Moellendorf et al.	6/18/2002	
		2002/0092340		Prater et al.	7/18/2002	

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date _____

Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	1	of	1
-------	---	----	---

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

Examiner
Signature

Date	
Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

1

of

1

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Art Unit	
Examiner Name	
Attorney Docket Number	1012.189

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6,223,589	05/01/2001	Dickert et al.	
		US- 4,893,496	1/16/1990	Bau et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
		EP 0 769 695 A	4-23-1997	NGK Insulators LTD		
		DE 100 14 724	9-27-2001	Endress Hauser GMBH Co.		
		JP 59126931	7-21-1984			

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		FISCH, M.R., et al., "Improved Acoustic Viscosimeter Technique", J. Acoust. Soc. Am., September 1976, pp. 623-625, v. 60, No. 3.	
		HLAVAY, J. and G.G. Guilbault, "Applications of the Piezoelectric Crystal Detector in Analytical Chemistry", Analytical Chemistry, November 1977, pp. 1890-1898, v. 49, No. 13.	
		KANAZAWA, K. KEIJI and Joseph G. Gordon II, "The Oscillation Frequency of a Quartz Resonator in Contact with a Liquid", Analytica Chimica Acta, 1985, pp. 99-105, Elsevier Science Publishers B.V., Amsterdam.	
		KIPLING, ARLIN L and Michael Thompson, "Network Analysis Method Applied to Liquid-Phase Acoustic Wave Sensors", Anal. Chem., 1990, pp. 1514-1519, 62.	
		MICHELS, A. et al., "1 MHz Quartz Length Extension Resonator as a Probe for Scanning Near-Field Acoustic Microscopy", Thin Solid Films, 1995, pp. 172-175, 264.	
		MURAMATSU, HIROSHI et al., "Computation of Equivalent Circuit Parameters of Quartz Crystals in Contact with Liquids and Study of Liquid Properties", Anal. Chem., 1988, pp. 2142-2146, 60.	
		MURAMATSU, H. et al., "A Quartz Crystal Viscosity Sensor for Monitoring Coagulation Reaction and Its Application to a Multichannel Coagulation Detector", Biosensors & Bioelectronics, 1991, pp. 353-358, 6, Elsevier Science Publishers Ltd. England.	
		NOMURA, T. and M. Iijima, "Electrolytic Determination of Nanomolar Concentrations of Silver in Solution with a Piezoelectric Quartz Crystal", Analytica Chimica Acta, 1981, pp. 97-102, 131, Elsevier Scientific Publishing Company.	
		PCT International Search Report, dated 27 April 1998, PCT/US97/18192.	
		NEWSAM, J. et al., "High Throughput Experimentation for the Synthesis of New Crystalline Microporous Solids," Microporous and Mesoporous Materials 48 (2001) 355-365.	
		AKPORIAYE, D. et al., "Combinatorial Chemistry - The Emperor's New Clothes?," Microporous and Mesoporous Materials 48 (2001) 367-373.	

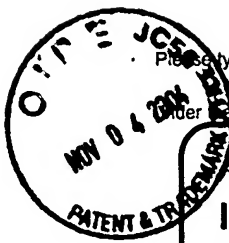
Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → +

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



<div style="float: left; width: 150px; text-align: right;">Substitute for form 1449B/PTO</div> <div style="clear: both;"></div> <h2 style="text-align: center; margin: 0;">INFORMATION DISCLOSURE STATEMENT BY APPLICANT</h2> <p style="text-align: center; margin: 5px 0;"><i>(use as many sheets as necessary)</i></p> <div style="display: flex; justify-content: space-between;"><div>Sheet 1 of 0</div><div style="border: 1px solid black; padding: 2px;">Complete if Known<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%;">Application Number</td><td>10/804,446</td></tr><tr><td>Filing Date</td><td>3/19/04</td></tr><tr><td>First Named Inventor</td><td>Kolosov</td></tr><tr><td>Group Art Unit</td><td></td></tr><tr><td>Examiner Name</td><td></td></tr><tr><td>Attorney Docket Number</td><td>1012-189</td></tr></table></div></div>		Application Number	10/804,446	Filing Date	3/19/04	First Named Inventor	Kolosov	Group Art Unit		Examiner Name		Attorney Docket Number	1012-189
Application Number	10/804,446												
Filing Date	3/19/04												
First Named Inventor	Kolosov												
Group Art Unit													
Examiner Name													
Attorney Docket Number	1012-189												

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Patent Abstracts of Japan, Publication No. 05-129874, Application No. 03-291660, filing date 11/7/1991, Applicant: Seiko Epson Corp.	
		Abstract of Patent No. JP60134617, published 7/17/1985, Applicant: Kinseki KK.	
		WULLNER et al., Multi-Function Microsensor for Oil Condition Monitoring Systems, pages 1-5.	
		HAUPTMANN et al., Ultrasonic Sensors for Process Monitoring and Chemical Analysis; State-of-the-Art and Trends, 1998, pages 32-48.	
		JAKOBY et al., Viscosity Sensing Using a Love-wave Device, 1998, pages 275-281.	
		POLLA et al., Processing and Characterization of Piezoelectric Materials and Integration into Microelectromechanical Systems, 1998, pages 563-597.	
		PUJARI et al., Reliable Ceramics for Advanced Heat Engines, American Ceramic Society Bulletin, Volume 74, No. 4, April 1995, pages 86-90.	
		ODEN et al., Viscous Drag Measurements Utilizing Microfabricated Cantilevers, American Institute of Physics, 1996, pages 3814-3816.	
		MERHAUT, Theory of Electroacoustics, pages 100 and 101.	
		MANALIS et al., Two-dimensional Micromechanical Bimorph Arrays for Detection of Thermal Radiation, Appl. Phys. Lett., Vol. 70, No. 24, June 16, 1997, pages 3311-3313.	
		LIN et al., Operation of an Ultrasensitive 30-MHz Quartz Crystal Microbalance in Liquids, Analytical Chemistry, Vo. 65, No. 11, June 1, 1993, pages 1546-1551.	

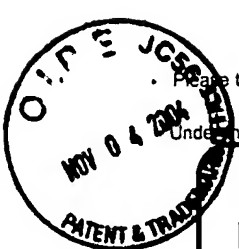
Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.





Please type a plus sign (+) inside this box → +

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		LI et al., Electromechanical Behavior of PZT-Brass Unimorphs, Journal of the American Ceramic Society, Vol. 82, No. 7, 1999, pages 1733-1740.	
		LANDAU et al., Fluid Mechanics, pages 96 and 97.	
		CLELAND et al., Fabrication of High Frequency Nonometer Scale Mechanical Resonators from Bulk Si Crystals, Appl. Phys. Lett., Vol. 69, No. 18, October 28 1996, pages 2653-2655.	
		International Search Report mailed July 9, 2004, PCT/US2004/008531 (1012.188WO1)	
		FERRY, Viscoelastic Properties of Polymers, Chapters 5-8, pages 96-176.	

Examiner
Signature

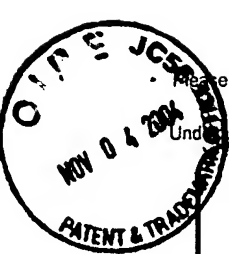
Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.





Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		U.S. Application Serial No. 09/420,334 entitled "Graphic Design of Combinatorial Material Libraries" (Lacy, et al.) filed on October 18, 1999	
		U.S. Patent Application Serial No. 09/305,830 titled "Synthesizing Combinatorial Libraries of Materials" (Rust, et al.) filed on May 5, 1999	
		U.S. Application Serial No. 09/755,623 entitled "Laboratory Database System and Methods For Combinatorial Materials Research" (Dorsett, Jr., et al.) filed on January 5, 2001.	
		The family of applications for U.S. Patent Application Serial No. 09/174,856 titled "Graphic Design of Combinatorial Material Libraries" (Lacy, et al.) filed on October 19, 1998.	
		U.S. Application Serial No. 09/550,549 entitled "Automated Process Control And Data Management System And Methods" (Crevier, et al.) filed on April 14, 2000.	
		U.S. Patent Application Serial No. 09/800,819 entitled "Method and Apparatus for Characterizing Materials by Using a Mechanical Resonator" filed on March 7, 2001.	
		U.S. Patent Application Serial No. 09/580,024 entitled "Instrument for High Throughput Measurement of Material Physical Properties and Method of Using the Same" filed on May 26, 2000.	
		U.S. Patent Application Serial No. 10/155,207 entitled "High Throughput Microbalance and Methods of Using Same" filed on May 24, 2002.	
		U.S. Patent Application Serial No. 09/285,963 entitled "Rapid Characterization of Polymers" (Safir et al.) filed on April 2, 1999.	
		PCT International Search Report, dated 21 October 2002, PCT/US02/17780 (1012-167WO)	

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

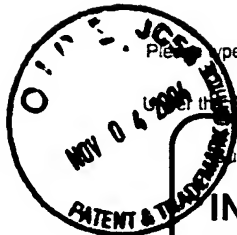
¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		MATSIEV, "Application of Flexural Mechanical Resonators to Simultaneous Measurements of Liquid Density and Viscosity", 1999 IEEE UltraSonics Symposium, pp. 457-460.	
		HAMMOND et al., "Sensor", Department of Electrical and Computer Engineering, University of Maine, pp. 1342-	
		GRATE et al., "Smart Sensor System for Trace Organophosphorsu"	
		KARRAI, "Lecture Notes on Shear and Friction Force Detection", March 2000	

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

10

Application Number

10/804,446

Filing Date

3/19/04

First Named Inventor

Kolosov

Group Art Unit

Examiner Name

Attorney Docket Number

1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

[illegible]

**Examiner
Signature**

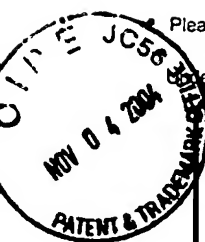
Date _____

Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/804,446		
		Filing Date	3/19/04		
		First Named Inventor	Kolosov		
		Group Art Unit			
		Examiner Name			
Sheet	1	of	0	Attorney Docket Number	1012-189

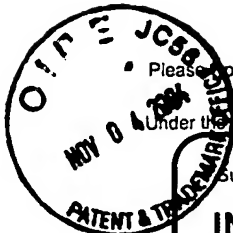
OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Pamphlet, "Hygroscopicity Measurement Apparatus," PUUMAN (no date).	
		Laine, E., and M. Aarnio, "Device for the Investigation of Humidity-related Behaviours of Materials," Department of Physics, University of Turku (no date).	
		Surface Acoustic Wave Hygrometer, http://technology.jpl.nasa.gov , accessed 3/16/2002, 2 pages.	
		Hoenk, Michael, et al., "Surface Acoustic Wave Hygrometer: Measuring Water Vapor in Earth's Atmosphere," http://mishkin.jpl.nasa.gov , accessed 3/16/2002, 7 pages.	
		Trolier, Susan et al., "Preparation of Chemically Etched Piezoelectric Resonators for Density Meters and Viscometers", Mat. Res. Bull., Vol. 22, pp. 1287-1274 (1987)	
		J.M. Hammond, R.M. Lee, D.G. Libby, XJ Zhang and L.A. Prager, "An Acoustic Automotive Engine Oil Quality Sensor", Transducers 97, S. 1343-1346.	
		H. Valimaki, J. Leikkala, H. Helle, "Evaluation of Equivalent Circuit Model for Thickness-Shear Mode Resonators in Liquids", Eurosensors X, Leuven, Belgium 11.9.1996, S1377-1380.	
		H. Endo, K. Soda, I. Karube, H. Muramatsu, "Online Monitoring of the Viscosity in Dextran Fermentation Using Piezoelectric Quartz Crystal", Biotechnology and Bioengineering, Vol. 36, S 636-641 (1990)	
		Mason W. P., Hill M., "Measurement of the Viscosity and Shear Elasticity of Liquids by Means of a Torsionally Vibrating Crystal", Transactions of A.S.M.E., 69 (1947) 359-370	
		Barnes C., "An in vitro urea sensor using a torsion-wave crystal device", Sensors and Actuators B, 8 (1992) 143-149.	
		Schmitt N. et al., "A new method based on acoustic impedance measurements for quartz immunosensors", Sensors and Actuators B43 (1997) 217-233	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please place a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Senstronics "Storm 50 Joint Pressure and Temperature Specifications".	
		"Cantilever Sensor Research Tool for Science and Industry", diScentris, Veeco.	
		BENES et al., "Viscosity Sensor Based on a Symmetric Dual Quartz Thickness Shear Resonator", pages 1-7. 2003.	
		NSF Award Abstract #0239151, February 6, 2003, pages 1-2.	
		NUSSBAUM, "An Accurate Non-Radioactive Fluid Density Sensor", presentation to the Society of Petroleum Engineers, Bergen, Norway, April 1, 2003.	
		FLEMING, "The Vibrating Tuning Fork Fluid Density Tool", pp. H1-H15.	
		"The Lubri-Sensor Electronic Oil Quality Analyser", www.pmlubricants.com, accessed on February 5, 2004.	
		"Sensor Technology Improves Jet Engine Reliability", www.afrlhorizons.com, accessed on February 5, 2004.	
		"Oil Quality Sensor", www.sae.org, accessed on February 5, 2004.	
		"Refrigerant Flow in Evaporators", www.heatcrafterom.com, accessed on February 5, 2004.	

Examiner
Signature

Date
Considered

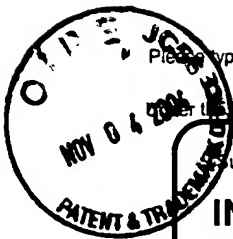
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		"Theory of the Vibrating Tuning Fork Fluid Density Tool", www. lncs.ac.uk, page 1, accessed on May 7, 2003.	
		"A Vibrating Tuning Fork Fluid Density Tool", www. smithinst.ac.uk, page 1, accessed on February 2, 2004.	
		"SINIMS Oil and Gas Workshop", Draft: Notes of presentations and discussions, ICMS, Edinburgh, March 11, 2002.	
		"Field Trials of The Viscosity & Fluid Density Tool (VFD)", Nan Gall Technology, published August 2002.	
		"ViscoMaster HFO Viscosity Transmitter for Marine and Power Applications", Solartron Mobrey.	
		"CJV-5000 Vibro Viscometer Utilizing Tuning-Fork Technology", Yahoo Search accessed on June 18, 2003.	
		"SOS-Smart Oil Sensor", Impact Technologies, LLC.	
		Pamphlet by Kavlico-A Solectron Company, Capability Brochure Industrial Sensors and Transducers.	

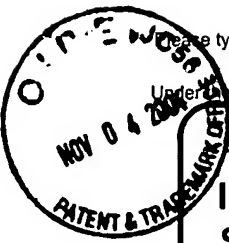
Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → +

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known			
		Application Number	10/804,446		
		Filing Date	3/19/04		
		First Named Inventor	Kolosov		
		Group Art Unit			
		Examiner Name			
Sheet	1	of	0	Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		A&D Weighing, SV Series Users' Handbook V1.04E, pp. 1-40.	
		"EPSON presents the MC-30A: Reliable 32.768kHz Dedicated to Automotive Applications", August 25, 2003, www.epson.com, accessed on February 11, 2004.	
		LEC et al., "A Remote Acoustic Engine Oil Quality Sensor", 1997 IEEE UltraSonics Symposium, pp. 419-422.	
		ZHANG et al, "Contributions of Amplitude Measurement in QCM Sensors", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, Vol. 43, No. 5, September 1996, pp. 942-947.	

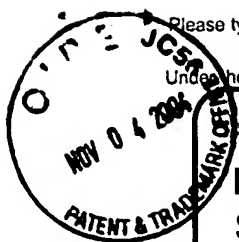
Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.





Please type a plus sign (+) inside this box → ☐

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/804,446		
		Filing Date	3/19/04		
		First Named Inventor	Kolosov		
		Group Art Unit			
		Examiner Name			
Sheet	1	of	0	Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		SMITH et al., Water Sorption Isotherms and Enthalpies of Water Sorption by Lysozyme Using the Quartz Crystal Microbalance/heat Conduction Calorimeter, BIOCHIMICA et BIOPHYSICA ACTA, October 4, 2001, pages 150-159.	
		ULBRICHT, Helmar, Crimpen-eine ausgereifte AnschluBtechnik	
		International Search Report dated 8/4/2004, PCT/US2004/008552	
		Zeisel et al., A PRecise and Robust Quartz Sensor Based on Tuning Fork Technology for (SF6)- Gas Density Control, Elsevier Sciences, 2000	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

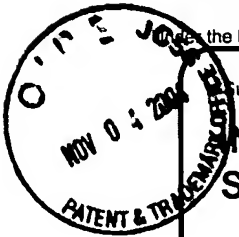
¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → +

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

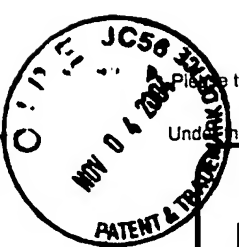
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		J.W. Grate, et al, "Smart Sensor System for Trace Organophosphorus and Organosulfur Vapor Detection Employing a Temperature-Controlled Array of Surface Acoustic Wave Sensors, Automated Sample Preconcentration, and Pattern	
		"Viscosity and Density Sensing with Ultrasonic Plate Waves, B.A. Martin, S.W. Wenzel, and R.M. White, Sensors and Actuators, A21-A23 (1990), 704-708	
		"On-line Sensor for Density and Viscosity Measurement of a Liquid or Slurry for Process Control in the Food Industry" Margaret S. Greenwood, Ph.D. James R. Skorpik, Judith Ann Bamberger, P.E. Sixth Conference on Food Engineering, 1999 AIChE Annual Meeting, Dallas, Texas	
		"Micromachined viscosity sensor for real-time polymerization monitoring", O.Brand, J.M. English, S.A. Bidstrup, M.G. Allen, Transducers '97, 121-124 (1997)	
		"Frequency response of cantilever beams immersed in viscous fluids with applications to the atomic force microscope", J.E. Sader, J. Appl. Phys. 84, 64-76 (1998)	
		"Resonance response of scanning force microscopy cantilever", G.Y. Chen, R.J. Warmack, T.Thundat, and D.P. Allison, Rev. Sci. Instrum. 65, 2532-2537(1994)	
		"Lecture notes on shear and friction force detection with quartz tuning forks" Work presented at the "Ecole Thématique du CNRS" on near-field optics, March 2000, La Londe les Maures, France by Khaled Karrai, Center for	
		J. Sorab, G.S. Saloka: "Engine Oil Viscosity Swnsors Using Disks of PZT Ceramic as Electromechanical Vibrators" Society of Automotive Engineers SAE, no. 971702, 1997	
		E. Bohmer, "Elemente der angewandten Elektronik", August 1978, with English translation	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box → ☐

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SB/08B (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 0

Complete if Known

Application Number	10/804,446
Filing Date	3/19/04
First Named Inventor	Kolosov
Group Art Unit	
Examiner Name	
Attorney Docket Number	1012-189

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Zhang et al.: "Determination of Liquid density with a low frequency mechanical sensor based on quartz tuning fork" Sensors and Actuators B, Elsevier Sequoia S.A. Lausanne, CH. vol. 84, no. 2-3, May 15, 2002, pages 123-128.	
		Shih et al.: "Simultaneous Liquid Viscosity and Density Determination with Piezoelectric Unimorph Cantilevers: Journal of Applied Physics, American Institute of Physics. New York, U.S., vol. 89, no. 2, January 15, 2001, pages 1497-1505.	
		Dring et al.: "Integrated on-line multisensing of fluid flow using a mechanical resonator" Sensors and Actuators A, Elsevier Sequoia S.A., Lausanne, CH, vol. 85, no. 1-3, August 25, 2000, pages 275-279.	
		International Search Report dated March 22, 2004 (PCT/US03/32982) 1012.183WO	
		International Search Report dated December 12, 2003 (PCT/US03/12503) 1012.171WO	
		Greenwood et al., "Measurement of Viscosity and Shear Wave Velocity of a Liquid or Slurry for On-line Process Control", Ultrasonics 39 (2002) pp. 623-630.	
		"Sensors", www.izm.fhg.de, accessed on October 3, 2002.	
		"Sensors and Actuators, INTELLEK Oil Condition Sensor", DELPHI Energy and Chassis Systems.	
		MURAMATSU et al., "Viscosity Monitoring with a Piezoelectric Quartz Crystal and Its Application to Determination of Endotoxin by Gelation of Limulus Amebocyte Lysate", March 8, 1988.	
		LANGDON, "Vibratory Process Control Transducers", The Marconi Review, Third Quarter, 1980, pp 156-175.	
		Invitation to Pay Additional Fees, PCT/US03/32983, mailed April 8, 2004. (1012.192WO)	

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.